REMARKS

In the non-final Office Action, the Examiner rejects claims 1, 2, 4, 5, and 7-20 under 35 U.S.C. § 102(e) as anticipated by LECHNER (U.S. Patent Application Publication No. 2006/0262945). Applicant respectfully traverses these rejections.

By way of the present amendment, Applicant amends claims 1, 5, 12, 14, 15, and 17 to improve form. No new matter has been added by way of the present amendment. Claims 1, 2, 4, 5, and 7-20 are pending.

Rejection under 35 U.S.C. § 102(e) based on LECHNER

Claims 1, 2, 4, 5, and 7-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by LECHNER. Applicant respectfully traverses this rejection.

Amended claim 1 recites a portable electronic device that includes a speaker connected to a first sound signal source; a receiver for sound reproduction, where the receiver is connected to a second sound signal source, the speaker and the receiver sharing a back volume pace within the portable electronic device; and a control unit to: actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active. LECHNER does not disclose one or more of these features.

For example, LECHNER does not disclose a speaker connected to a first sound signal source, and a receiver for sound reproduction, where the receiver is connected to a second sound signal source, the speaker and the receiver sharing a back volume pace within the portable electronic device, as recited in amended claim 1. The Examiner relies on element 3 of LECHNER as allegedly disclosing a speaker and relies on element 2 of LECHNER as allegedly disclosing a receiver (Office Action, pg. 3). Applicant

respectfully submits that LECHNER does not disclose or suggest the features of amended claim 1.

Element 2 of LECHNER corresponds to an earpiece speaker and element 3 of LECHNER corresponds to a loudspeaker. LECHNER discloses that an audio signal is provided to the earpiece speaker 2 and/or the loudspeaker 3 (paragraph 0018). Therefore, LECHNER discloses that earpiece speaker 2 and loudspeaker 3 are connected to a single sound signal source. As such, LECHNER does not disclose a speaker connected to a first sound signal source, and a receiver for sound reproduction, where the receiver is connected to a second sound signal source, the speaker and the receiver sharing a back volume pace within the portable electronic device, as recited in amended claim 1.

LECHNER further does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active. The Examiner relies on Figs. 1-3, paragraph 0002, paragraph 0010, paragraph 0018 (which describes Fig. 1), and paragraph 0020 (which describes Fig. 3) of LECHNER as allegedly this feature of claim 1 (Office Action, pg. 3). Applicant respectfully disagrees with the Examiner's interpretation of LECHNER.

At Fig. 2, LECHNER discloses a commonly used type of an electronic driving circuit for a mobile terminal with a loudspeaker. By applying a control signal to the control port of the audio power amplifier, a user can turn the loudspeaker on or off at his will (paragraph 0019). Fig. 2 of LECHNER does not disclose suppressing movement of a membrane in a receiver. Therefore, Fig. 2 of LECHNER does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or

current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active, as recited in claim 1.

At paragraph 0002, LECHNER discloses:

> Common mobile terminals like e.g. mobile phones, personal digital assistants (PDA) or the like, are equipped with an earpiece speaker and a buzzer as standard acoustic components. The earpiece speaker is hereby typically used to transduce an audio signal provided by a voiceband electronic circuit of the mobile terminal into a respective sound signal. Other signals, like e.g. ringing tones or alarms are usually produced in form of square wave signals with variable pulse width and are transduced into a respective sound signal by a so-called buzzer. On many current mobile terminals, particularly on high-grade models, the buzzer is replaced by a hands-free speaker, which will in the following be referred to as loudspeaker. This loudspeaker usually not only transduces square wave buzzer signals, but is also used for reproducing ringer tones which are often provided in the form of polyphonic melodies. The loudspeaker is further used to transduce audio signals originating from the voiceband electronic circuit like the earpiece speaker but at a higher sound level than that, for to enable a user to operate the mobile terminal in hands-free mode. For this purpose, an audio power amplifier external to the voiceband electronic circuit is wired between an output of the voiceband electronic circuit and the loudspeaker. The loudspeaker is either connected to a separate output of the voiceband electronic circuit or it shares the only one output provided with the earpiece speaker.

This section of LECHNER discloses that an audio power amplifier external to a voiceband electronic circuit is wired between an output of the voiceband electronic circuit and a loudspeaker to allow the loudspeaker to transduce audio signals originating from the voiceband electronic circuit at a higher sound level. This section of LECHNER has nothing to do with controlling voltage or current applied to a receiver, let alone controlling voltage or current applied to a receiver such that movement of a membrane of the receiver is suppressed. Therefore, LECHNER does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed

to actively reduce acoustic leakage from the receiver when the speaker is active, as recited in claim 1.

At paragraph 0010, LECHNER discloses:

> The invention uses the fact, that a balanced output of a voiceband integrated circuit can be operated in two modes. In a first mode, the audio signal is provided on both ports of the output in-phase, while in the second mode the signals provided are of opposite phase. Thus, the adder circuit will produce a zero sum signal for the second mode which corresponds to a turn-off of the audio signal provided to the loudspeaker without the necessity of employing an analogue switch as in the prior art. At the earpiece speaker, the opposite-phase signals correspond to an audio signal of double amplitude allowing it to produce a sound corresponding to a currently present audio signal. In the other mode, the earpiece speaker is silent while the loudspeaker transduces the audio signal. Without a necessity for external control devices, like for instance an analogue switch or the like, the electronic circuit of the present invention makes advantageously use of the control functions already provided by a voiceband electronic circuitry used in mobile terminals.

This section of LECHNER discloses a first mode in which an audio signal is provided on both ports of an output in-phase, while in the second mode the signals provided are of opposite phase. At the earpiece speaker, the opposite-phase signals correspond to an audio signal of double amplitude allowing it to produce a sound corresponding to a currently present audio signal. In the other mode, the earpiece speaker is silent while the loudspeaker transduces the audio signal. This section of LECHNER does not disclose suppressing movement of a membrane in a receiver. Therefore, this section of LECHNER does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active, as recited in claim 1.

At paragraph 0018, LECHNER discloses:

> The circuit diagram of FIG. 1 shows a first example of a commonly used electronic driving circuit for distributing an audio signal provided by a voiceband electronic circuit 1 to an earpiece speaker and/or a loudspeaker of a mobile terminal. The electronic driving circuit 1 is formed by a voiceband electronic

> circuit 8 indicated by an enclosing dashed line in FIG. 1, and by a circuitry external to it. This external circuit contains the earpiece speaker 2, the loudspeaker 3 and the audio power amplifier 4 for amplifying the difference of the audio signals provided at each of the two output ports 6-1 and 6-2 of the voiceband integrated circuit output 6. The audio power amplifier can be switched on or off by means of a control port 5 available at the audio amplifier 4. An audio signal generated or processed within the voiceband electronic circuit is directed by a switching means 8-5 or 8-6, respectively, to either the output stage for the loudspeaker or that for the earpiece speaker. The switching means 8-5 and 8-6 are typically formed by an electronic device like a transistor or the like which can be easily controlled by a control logic of the mobile terminal. The output stage for the loudspeaker 3 comprises an amplifier 8-1 which processes the audio signal in a non-inverting way and an amplifier 8-2 which inverts the audio signal. The audio signal provided on the two ports 6-1 and 6-2 of the output port 6 is thereby provided with opposite phases. The output stage for the second port 7 supplying the earpiece speaker is formed identical to the one described for the loudspeaker. For an audio signal to be transduced by the loudspeaker 3, the switch 8-5 is closed while the switch 8-6 disrupts the connection to the output stage for the output 7 of the voiceband electronic circuit. Thus, the audio signal is exclusively reproduced by the loudspeaker 3. In the other mode, switch 8-5 is open and switch 8-6 is closed resulting in an exclusive reproduction of an audio signal by the earpiece speaker.

This section of LECHNER discloses an electronic driving circuit for distributing an audio signal provided by a voiceband electronic circuit to an earpiece speaker and/or a loudspeaker of a mobile terminal. An audio signal generated or processed within the voiceband electronic circuit is directed by a switching means 8-5 or 8-6, respectively, to either the output stage for the loudspeaker or for the earpiece speaker. For an audio signal to be transduced by the loudspeaker, the switch 8-5 is closed while the switch 8-6 disrupts the connection to the output stage for the output of the voiceband electronic circuit. This section of LECHNER does not disclose suppressing movement of a membrane in a receiver. Therefore, this section of LECHNER does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active, as recited in claim 1.

At paragraph 0020, LECHNER discloses:

> Many mobile terminals not only provide polyphonic melodies for reminder or alarm signals, but also a square wave buzzer signal which a user can select for a respective purpose. The square wave buzzer signal is usually not produced within the voiceband electronic circuit but by a different circuitry and has to be supplied to the driving circuit external to the voiceband electronic circuit via an extra port 13. The audio amplifier 4 is wired to this end to form an adder circuit with an input resistance 12 for the buzzer signal and a further input resistance 10 for the audio signal and a feedback resistor 11. To allow an exclusive transmission of either the buzzer signal or the audio signal to the audio power amplifier 4 a switch control 9, 111e e.g. an analogue switch has to be placed between resistor 10 and the output port 6-1' of the voiceband electronic circuit 8. Besides being an additional electronic device, the switch control line needs an extra wiring to a logic control circuit of the mobile terminal. Further, like in the example of FIG. 2, the earpiece speaker cannot be turned on or off which is a major disadvantage of the driving circuitry 1" shown in FIG. 3.

This section of LECHNER discloses placing a switch control between a resistor and an output port of the voiceband electronic circuit to allow an exclusive transmission of either the buzzer signal or the audio signal to the audio power amplifier. This section of LECHNER does not disclose suppressing movement of a membrane in a receiver. Therefore, this section of LECHNER does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active, as recited in claim 1.

The Examiner further states that LECHNER discloses "the amplified speaker may be turn on/off thus allow only acoustical sound to earpiece and *thus implicitly/inherently causing such a reduction of the movement of the membrane of the receiver to be suppressed* with/as a result of having no *signal/vibration* to produce movement of the membrane as a result of the buzzing synonymously the (*vibration)* signal)" (Office Action, pp. 3-4). Applicants disagree.

Claim 1 specifically recites actively damping the receiver while the speaker is active. LECHNER discloses switching off the loudspeaker so the audio signal is produced by the earpiece speaker (paragraph 0018), which causes the loudspeaker to be inactive. Therefore, LECHNER does not disclose a control unit to actively damp the receiver while the speaker is active by controlling voltage or current applied to the receiver such that movement of a membrane of the receiver is suppressed to actively reduce acoustic leakage from the receiver when the speaker is active, as recited in claim 1.

For at least the foregoing reasons, Applicant submits that claim 1 is not anticipated by LECHNER.

Claims 2, 4, and 8 depend from claim 1. Therefore, these claims are not anticipated by LECHNER for at least the reasons given above with respect to claim 1.

Independent claims 5, 12, 14, 15, and 17 recite features similar to, yet possibly of different scope than, features recited above with respect to amended claim 1. Therefore, these claims are not anticipated by LECHNER for at least the reasons given above with respect to claim 1.

Claims 7, 9, and 10 depend from claim 5. Therefore, these claims are not anticipated by LECHNER for at least the reasons given above with respect to claim 5.

Claim 11 depends from claim 12. Therefore, claim 11 is not anticipated by LECHNER for at least the reasons given above with respect to claim 12. Moreover, claim 11 recites additional features not disclosed by LECHNER.

For example, claim 11 recites that the control unit constrains a diaphragm of the receiver to a fixed position to actively damp the receiver. The Examiner relies on Figs. 1

and 2 of LECHNER for allegedly disclosing this feature of claim 11 (Office Action, pg. 5). Applicant respectfully disagrees with the Examiner's interpretation of LECHNER.

At Fig. 1, LECHNER discloses a circuit diagram that shows a commonly used electronic driving circuit for distributing an audio signal provided by a voiceband electronic circuit to an earpiece speaker and/or a loudspeaker of a mobile terminal (paragraph 0018). Fig. 1 of LECHNER does not disclose a diaphragm, let alone constraining a diaphragm. Therefore, Fig. 1 of LECHNER does not disclose that the control unit constrains a diaphragm of the receiver to a fixed position to actively damp the receiver, as recited in claim 11.

At Fig. 2, LECHNER discloses a commonly used type of an electronic driving circuit for a mobile terminal with a loudspeaker. By applying a control signal to the control port of the audio power amplifier, a user can turn the loudspeaker on or off at his will (paragraph 0019). Fig. 2 of LECHNER does not disclose a diaphragm, let alone constraining a diaphragm. Therefore, Fig. 2 of LECHNER does not disclose that the control unit constrains a diaphragm of the receiver to a fixed position to actively damp the receiver, as recited in claim 11.

For at least these additional reasons, Applicant submits that claim 11 is not anticipated by LECHNER.

Claim 13 depends from claim 14. Therefore, claim 13 is not anticipated by LECHNER for at least the reasons given above with respect to claim 14. Moreover, claim 13 recites additional features not disclosed by LECHNER.

For example, claim 13 recites feature similar to, yet possibly of different scope than, features recited above with respect to claim 11. Therefore, claim 13 is not

anticipated by LECHNER for at least reasons similar to the reasons given above with respect to claim 11.

Claims 18-20 depend from claim 15. Therefore, these claims are not anticipated by LECHNER for at least the reasons given above with respect to claim 15.

Claim 16 depends from claim 17. Therefore, claim 16 is not anticipated by LECHNER for at least the reasons given above with respect to claim 17. Moreover, claim 16 recites additional features not disclosed by LECHNER.

For example, claim 16 recites feature similar to, yet possibly of different scope than, features recited above with respect to claim 11. Therefore, claim 16 is not anticipated by LECHNER for at least reasons similar to the reasons given above with respect to claim 11.

CONCLUSION

In view of the foregoing amendment and remarks, Applicant respectfully requests that the Examiner's reconsideration and allowance of the present application.

As Applicant's remarks with respect to the Examiner's rejections overcome the rejections, Applicant's silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such assertions (e.g., whether a reference constitutes prior art, reasons for modifying a reference and/or combining references, assertions as to dependent claims, etc.) is not a concession by Applicant that such assertions are accurate or that such requirements have been met, and Applicant reserves the right to dispute these assertions/requirements in the future.

If the Examiner does not believe that all pending claims are now in condition for allowance, the Examiner is urged to contact the undersigned to expedite prosecution of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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